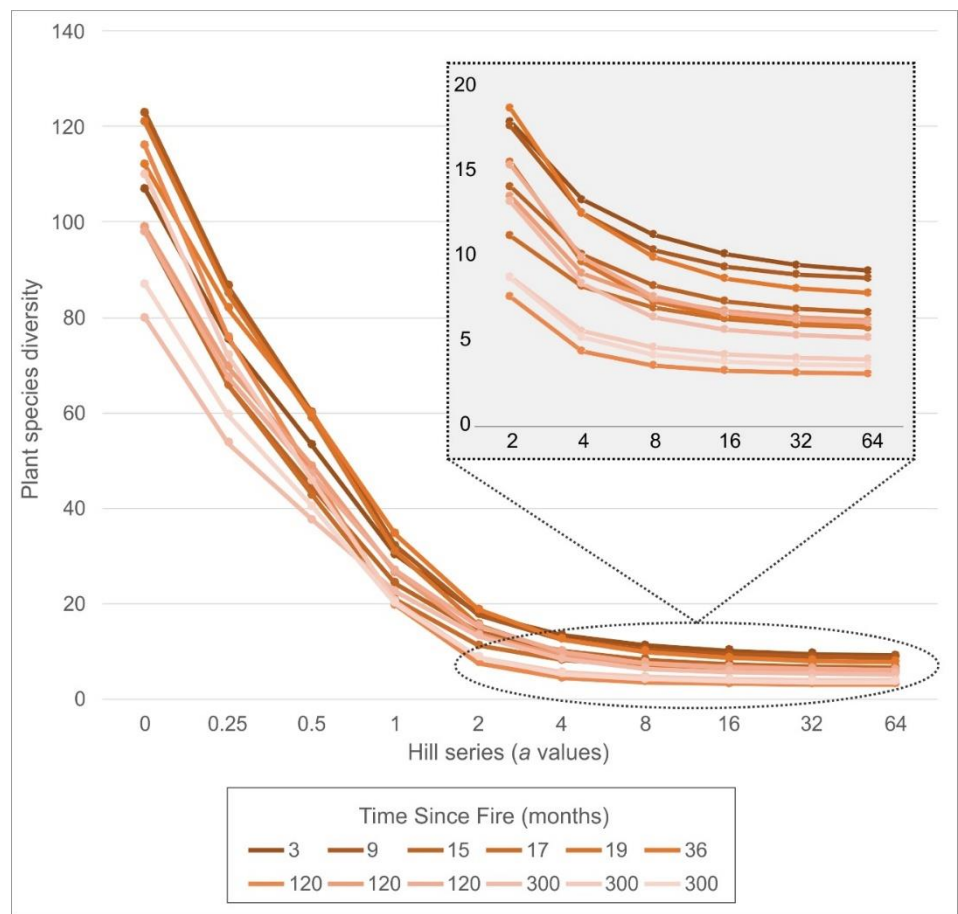


**Figure S1.** Diversity profiles of plant communities. It includes the diversity profiles (plant species diversity) with Hill's series for 12 grassland sites with varying time since the last fire event (Time Since Fire).



## Figures S2-12

Species distribution of network modules in all sampled networks. It includes two lists, one of plants and other with flower visitor species complete name and the respective code in the modules. Site legends: Morro do Osso Natural Park (MO), Saint'Hilaire Municipal Park (SH), São Pedro Wildlife Refuge (SP) and Itapuã State Park (PI).

List of plant species name and respective codes.

Plant species complete name	Plant code	Plant species complete name	Plant code
<i>Abutilon malachroides</i>	Ab_ma	<i>Habranthus pedunculatus</i>	Ha_pe
<i>Aeschynomene falcata</i>	Ae_fa	<i>Herbertia pulchella</i>	He_pu
<i>Aldama nudicaulis</i>	Al_nu	<i>Hieracium commersonii</i>	Hi_co
<i>Angelonia integerrima</i>	An_in	<i>Holocheilus brasiliensis</i>	Ho_br
<i>Asclepias mellodora</i>	As_me	<i>Hypericum brasiliense</i>	Hy_br
<i>Aspilia montevidensis</i>	As_mo	<i>Ipomea</i> sp.1	Ip_sp
<i>Austroeupatorium inulaefolium</i>	Au_in	<i>Ipomoea uruguayensis</i>	Ip_ur
<i>Austroeupatorium laetevirens</i>	Au_la	<i>Janusia guaranitica</i>	Ja_gu
<i>Baccharis articulata</i>	Ba_ar	<i>Lantana camara</i>	La_ca
<i>Baccharis crispa</i>	Ba_cr	<i>Lessingianthus brevifolius</i>	Le_br
<i>Baccharis leucopappa</i>	Ba_le	<i>Macroptilium prostratum</i>	Ma_pr
<i>Baccharis psiadioides</i>	Ba_ps	<i>Mimosa dolens</i>	Mi_do
<i>Baccharis riograndensis</i>	Ba_ri	<i>Mimosa sanguinolenta</i>	Mi_sa
<i>Baccharis sagittalis</i>	Ba_sa	<i>Mimosa</i> sp.1	Mi_1
<i>Baccharis tridentata</i>	Ba_tr	<i>Monnina oblongifolia</i>	Mo_ob
<i>Borreria brachystemonoides</i>	Bo_br	<i>Nothoscordum montevidensis</i>	No_mo
<i>Calea uniflora</i>	Ca_un	<i>Pamphalea commersonii</i>	Pa_co
<i>Calibrachoa excellens</i>	Ca_ex	<i>Parodia ottonis</i>	Pa_ot
<i>Campomanesia aurea</i>	Ca_au	<i>Pavonia friesii</i>	Pa_fr
<i>Campuloclinium macrocephalum</i>	Ca_ma	<i>Petunia integrifolia</i>	Pe_in
<i>Centrosema virginianum</i>	Ce_vi	<i>Pfaffia tuberosa</i>	Pf_tu
<i>Chamaecrista repens</i>	Ch_re	<i>Piriqueta taubatensis</i>	Pi_ta
<i>Chromolaena ascendens</i>	Ch_as	<i>Porophyllum curticeps</i>	Po_cu
<i>Chromolaena ascendens</i> var. <i>parasitosum</i>	Ch_as_pa	<i>Pterocaulon angustifolium</i>	Pt_an
<i>Chromolaena hirsuta</i>	Ch_hi	<i>Rhynchosia corylifolia</i>	Rh_co
<i>Chromolaena laevigata</i>	Ch_la	<i>Rhynchospora setigera</i>	Rh_se
<i>Chrysolaena flexuosa</i>	Ve_fl	<i>Richardia grandiflora</i>	Ri_gr
<i>Collaea stenophylla</i>	Co_st	<i>Schlechtendalia luzulifolia</i>	Sc_lu
<i>Commelina erecta</i>	Co_er	<i>Senecio heterotrichius</i>	Se_he
<i>Croton gnaphalii</i>	Cr_gn	<i>Sida regnellii</i>	Si_re
<i>Cypella amplimaculata</i>	Cy_am	<i>Sinningia allagophylla</i>	Si_al
<i>Cypella herbertii</i>	Cy_he	<i>Sisyrinchium avenaceum</i>	Si_av
<i>Desmodium cuneatum</i>	De_cu	<i>Sisyrinchium megapotamicum</i>	Si_me
<i>Disynaphia ligulifolia</i>	Di_li	<i>Sisyrinchium palmifolium</i>	Si_pa
<i>Dyckia choristaminea</i>	Dy_ch	<i>Sisyrinchium vaginatum</i>	Si_va
<i>Dyckia leptostachya</i>	Dy_le	<i>Solanum sisymbriifolium</i>	So_si
<i>Epidendrum fulgens</i>	Ep_fu	<i>Solidago chilensis</i>	So_ch
<i>Eryngium ciliatum</i>	Er_ci	<i>Stachytarpheta cayennensis</i>	St_ca
<i>Eryngium elegans</i>	Er_el	<i>Stenocephalum megapotamicum</i>	St_me
<i>Eryngium eriophorum</i>	Er_er	<i>Symphiopappus reticulatus</i>	Sy_re
<i>Eryngium horridum</i>	Er_ho	<i>Tibouchina gracilis</i>	Ti_gr
<i>Eryngium megapotamicum</i>	Er_me	<i>Trixis nobilis</i>	Tr_no
<i>Eryngium pristis</i>	Er_pr	<i>Varronia curassavica</i>	Va_cu
<i>Eryngium sanguisorba</i>	Er_sa	<i>Verbena intermedia</i>	Ve_in
<i>Evolvulus glomeratus</i>	Ev_gl	<i>Verbena sagittalis</i>	Ve_sa
<i>Evolvulus sericeus</i>	Ev_se	<i>Verbesina sordescens</i>	Ve_so

Plant species complete name	Plant code	Plant species complete name	Plant code
<i>Galianthe fastigiata</i>	Ga_fa	<i>Vernonanthura lucida</i>	Ve_lu
<i>Gelasine elongata</i>	Ge_el	<i>Vernonanthura squamulosa</i>	Ve_sq
<i>Glechon ciliata</i>	Gl_ci	<i>Vernonanthura nudiflora</i>	Ve_nu
<i>Glechon marifolia</i>	Gl_ma	<i>Vernonia hypochaeris</i>	Ve_hy
<i>Grazielia intermedia</i>	Gr_in	<i>Walemburgia linarioides</i>	Wa_li
<i>Gyptis pinnatifida</i>	Gy_pi	<i>Waltheria douradinha</i>	Wa_do
		<i>Wissadula glechomifolia</i>	Wi_gl

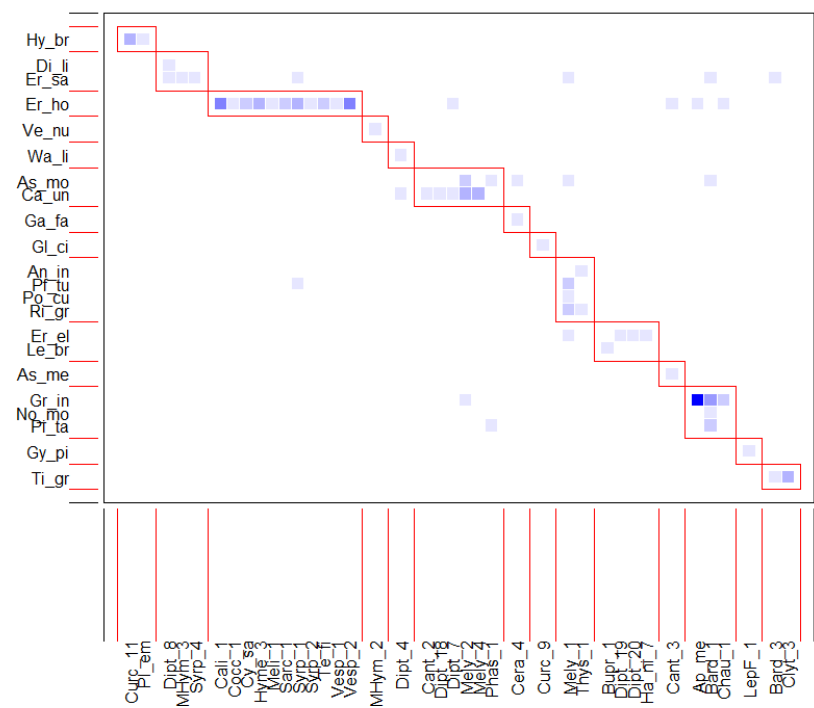
List of flower visitors species/morphospecies and respective codes.

Insect species/morphospecies complete name	Insect code	Insect species/morphospecies complete name	Insect code
Melyridae sp.1	Mely_1	Diptera sp.6	Dipt_6
Syrphidae sp.1	Syrp_1	Diptera sp.7	Dipt_7
Alticini sp.1	Alti_1	Diptera sp.8	Dipt_8
Alticini sp.2	Alti_2	Diptera sp.46	Dipt_46
Alticini sp.3	Alti_3	Elateridae sp.1	Elat_1
Anthribidae sp.1	Anth_1	Elateridae sp.2	Elat_2
<i>Apis mellifera</i>	Ap_me	Ensifera sp.1	Ensi_1
<i>Augochlora</i> sp.2	Au_ra_2	Ensifera sp.2	Ensi_2
<i>Augochlora</i> sp.3	Au_ra_3	Ensifera sp.3	Ensi_3
<i>Augochlora</i> sp.4	Au_ra_4	Ensifera sp.4	Ensi_4
<i>Augochlorella</i> sp.1	Au_la_1	Ensifera sp.5	Ensi_5
<i>Augochlorella</i> sp.2	Au_la_2	Ensifera sp.6	EnsF_1
<i>Augochlorella</i> sp.3	Au_la_3	Eucerini sp.1	Euce_1
<i>Augochlorini</i> sp.3	Au_ni_3	Eumolpinae sp.1	Eumo_1
<i>Augochlorini</i> sp.4	Au_ni_4	<i>Euphoria lurida</i>	Eu_lu
<i>Augochlorini</i> sp.5	Au_ni_5	Halictini sp.1	Ha_ni_1
<i>Augochlorini</i> sp.6	Au_ni_6	Halictini sp.3	Ha_ni_3
<i>Augochlorini</i> sp.7	Au_ni_7	Halictini sp.4	Ha_ni_4
<i>Augochlorini</i> sp.8	Au_ni_8	Halictini sp.5	Ha_ni_5
<i>Augochloropsis</i> sp.1	Au_is_1	Halictini sp.6	Hali_6
<i>Augochloropsis</i> sp.2	Au_is_2	Halictini sp.6	Ha_ni_6
<i>Augochlorini</i> sp.4	Au_ni_4	Halictini sp.7	Ha_ni_7
Bardinae sp.1	Bard_1	Hymenoptera sp.1	Hyme_1
Bardinae sp.2	Bard_2	Hymenoptera sp.2 (micro)	MHym_2
Bardinae sp.3	Bard_3	Hymenoptera sp.3	Hyme_3
Bardinae sp.4	Bard_4	Hymenoptera sp.4	Hyme_4
<i>Bombus morio</i>	Bo_mo	Hymenoptera sp.5 (micro)	MHym_3
Bruchinae sp.1	Bruc_1	Hymenoptera sp.6 (micro)	Mhym_4
Buprestidae sp.1	Bupr_1	Hymenoptera sp.7 (micro)	Mhym_5
Caelifera sp.1	Cael_1	Hymenoptera sp.8 (micro)	Mhym_6
Caelifera sp.2	CaeF_1	Hymenoptera sp.9 (micro)	Mhym_7
Caelifera sp.3	CaeF_2	Lagriinae sp.1	Lagr_1
Caliphoridae sp.1	Cali_1	<i>Lasionota</i> sp.1	Lasi_1
Caliphoridae sp.2	Cali_2	<i>Lema</i> sp.1	Lema_1
Caliphoridae sp.3	Cali_3	Lepidoptera sp.1	Lepi_1
Cantharidae sp.1	Cant_1	Lepidoptera sp.2	Lepi_2
Cantharidae sp.2	Cant_2	Lepidoptera sp.3	Lepi_3
Cantharidae sp.3	Cant_3	Lepidoptera sp.4	Lepi_4
<i>Ceratina</i> sp.1	Cera_1	Lepidoptera sp.5	Lepi_5
<i>Ceratina</i> sp.2	Cera_2	Lepidoptera sp.6	LepF_1
<i>Ceratina</i> sp.3	Cera_3	Lepidoptera sp.7	LepF_2
<i>Ceratina</i> sp.4	Cera_4	Lepidoptera sp.8	LepF_3
<i>Ceratina</i> sp.5	Cera_5	<i>Lexyphanes biplagiatus</i>	Le_bi

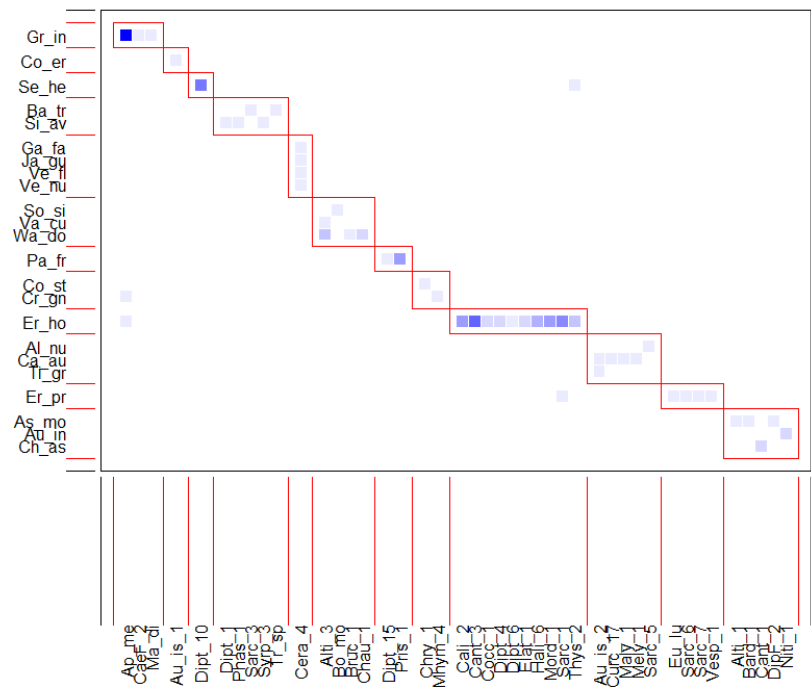
<b>Insect species/morphospecies complete name</b>	<b>Insect code</b>	<b>Insect species/morphospecies complete name</b>	<b>Insect code</b>
<i>Ceratina</i> sp.6	Cera_6	<i>Macraspis dichroa</i>	Ma_di
<i>Ceratina</i> sp.7	Cera_7	Megachiline sp.1	Mega_1
<i>Ceratina</i> sp.8	Cera_8	Megachiline sp.2	Mega_2
<i>Chauliognathus</i> sp.1	Chau_1	Megachiline sp.3	Mega_3
<i>Chrysoprasis</i> sp.1	Chry_1	Megachiline sp.4	Mega_4
Clytrini sp.1	Clyt_1	Megachiline sp.5	Mega_5
Coccinelidae sp.1	Cocc_1	Megachiline sp.6	Mega_6
<i>Corvicoana reticulata</i>	Co_re	Melandryidae sp.1	Mely_1
Cryptocephalinae sp.1	Cryp_1	Meliponini sp.1	Meli_1
Curculionidae sp.1	Curc_1	<i>Melitoma segmentaria</i>	Me_se
Curculionidae sp.10	Curc_10	Melyridae sp.1	Mely_1
Curculionidae sp.11	Curc_11	Melyridae sp.2	Mely_2
Curculionidae sp.12	Curc_12	Melyridae sp.3	Mely_3
Curculionidae sp.13	Curc_13	Melyridae sp.4	Mely_4
Curculionidae sp.14	Curc_14	Mordellidae sp.1	Mord_1
Curculionidae sp.15	Curc_15	Nitidulidae sp.1	Niti_1
Curculionidae sp.16	Curc_16	Phasmatodea sp.1	Phas_1
Curculionidae sp.17	Curc_17	<i>Plebeia droryana</i>	Pl_dr
Curculionidae sp.2	Curc_2	<i>Plebeia emerina</i>	Pl_em
Curculionidae sp.4	Curc_4	<i>Pristimerus</i> sp.1	Pris_1
Curculionidae sp.5	Curc_5	<i>Rhopitulus</i> sp.1	Rhop_1
Curculionidae sp.6	Curc_6	Sarcophagidae sp.1	Sarc_1
Curculionidae sp.8	Curc_8	Sarcophagidae sp.10	Sarc_10
Curculionidae sp.9	Curc_9	Sarcophagidae sp.11	Sarc_11
<i>Cycloneda sanguinea</i>	Cy_sa	Sarcophagidae sp.12	Sarc_12
Diabrotica sp.1	Diab_1	Sarcophagidae sp.13	Sarc_13
Diabrotica sp.2	Diab_2	Sarcophagidae sp.14	Sarc_14
<i>Dialictus pabulator</i>	Di_pa	Sarcophagidae sp.15	Sarc_15
Diptera sp.1	Dipt_1	Sarcophagidae sp.16	Sarc_16
Diptera sp.10	Dipt_10	Sarcophagidae sp.17	Sarc_17
Diptera sp.12	Dipt_12	Sarcophagidae sp.18	Sarc_18
Diptera sp.13	Dipt_13	Sarcophagidae sp.19	Sarc_19
Diptera sp.15	Dipt_15	Sarcophagidae sp.2	Sarc_2
Diptera sp.16	Dipt_16	Sarcophagidae sp.20	SarF_1
Diptera sp.17	Dipt_17	Sarcophagidae sp.3	Sarc_3
Diptera sp.18	Dipt_18	Sarcophagidae sp.4	Sarc_4
Diptera sp.19	Dipt_19	Sarcophagidae sp.5	Sarc_5
Diptera sp.20	Dipt_20	Sarcophagidae sp.6	Sarc_6
Diptera sp.22	Dipt_22	Sarcophagidae sp.7	Sarc_7
Diptera sp.23	Dipt_23	Sarcophagidae sp.8	Sarc_8
Diptera sp.24	Dipt_24	Sarcophagidae sp.9	Sarc_9
Diptera sp.25	Dipt_25	<i>Scaptotrigona bipunctata</i>	Sc_bi
Diptera sp.26	Dipt_26	Syrphidae sp.1	Syrp_1
Diptera sp.27	Dipt_27	Syrphidae sp.10	SyrF_2
Diptera sp.28	Dipt_28	Syrphidae sp.2	Syrp_2
Diptera sp.29	Dipt_29	Syrphidae sp.3	Syrp_3
Diptera sp.30	Dipt_30	Syrphidae sp.4	Syrp_4
Diptera sp.31	Dipt_31	Syrphidae sp.5	Syrp_5
Diptera sp.32	Dipt_32	Syrphidae sp.6	Syrp_6
Diptera sp.33	Dipt_33	Syrphidae sp.7	Syrp_7
Diptera sp.34	Dipt_34	Syrphidae sp.8	Syrp_8
Diptera sp.35	Dipt_35	Syrphidae sp.9	SyrF_1
Diptera sp.36	Dipt_36	Tapinotaspidini sp.1	Tapi_1
Diptera sp.37	Dipt_37	<i>Tetragonisca fiebrigi</i>	Te_fi
Diptera sp.38	Dipt_38	<i>Thygater analis</i>	Th_an

<b>Insect species/morphospecies complete name</b>	<b>Insect code</b>	<b>Insect species/morphospecies complete name</b>	<b>Insect code</b>
Diptera sp.39	Dipt_39	Thysanoptera sp.1	Thys_1
Diptera sp.4	Dipt_4	Thysanoptera sp.2	Thys_2
Diptera sp.40	Dipt_40	Thysanoptera sp.3	Thys_3
Diptera sp.41	Dipt_41	<i>Trigona spinipes</i>	Tr_sp
Diptera sp.42	Dipt_42	Vespididae sp.4	Vesp_4
Diptera sp.43	Dipt_43	Vespididae sp.1	Vesp_1
Diptera sp.44	Dipt_44	Vespididae sp.10	Vesp_10
Diptera sp.45	Dipt_45	Vespididae sp.11	Vesp_11
Diptera sp.47	Dipt_47	Vespididae sp.12	Vesp_12
Diptera sp.48	Dipt_48	Vespididae sp.2	Vesp_2
Diptera sp.49	Dipt_4B	Vespididae sp.5	Vesp_5
Diptera sp.50	DipF_1	Vespididae sp.6	Vesp_6
Diptera sp.51	DipF_2	Vespididae sp.7	Vesp_7
Diptera sp.52	DipF_3	Vespididae sp.8	Vesp_8
Diptera sp.53	DipF_4	Vespididae sp.9	Vesp_9
Diptera sp.6	Dipt_6	<i>Xylocopa frontalis</i>	Xy_fr

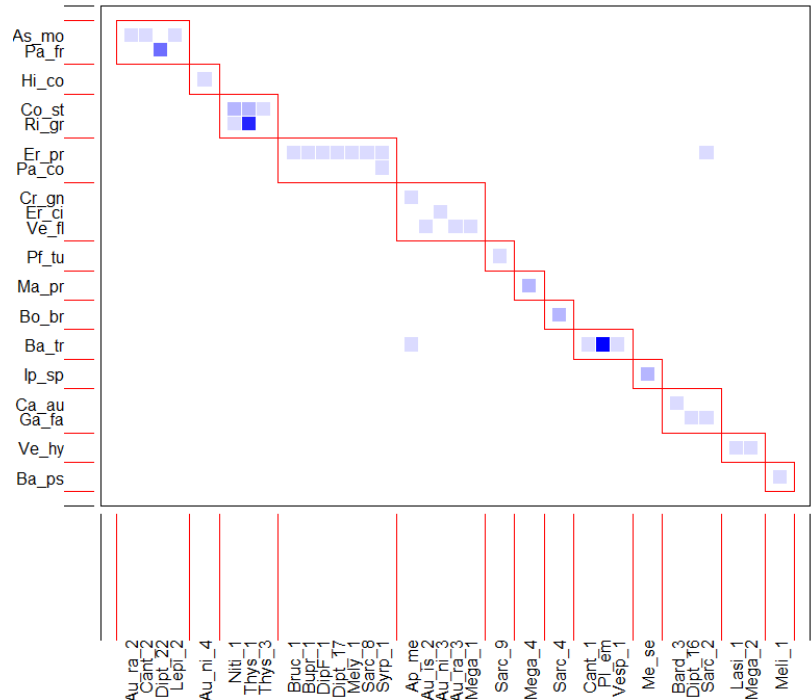
**Figure S2.** Network modules (red polygons) from site MO1



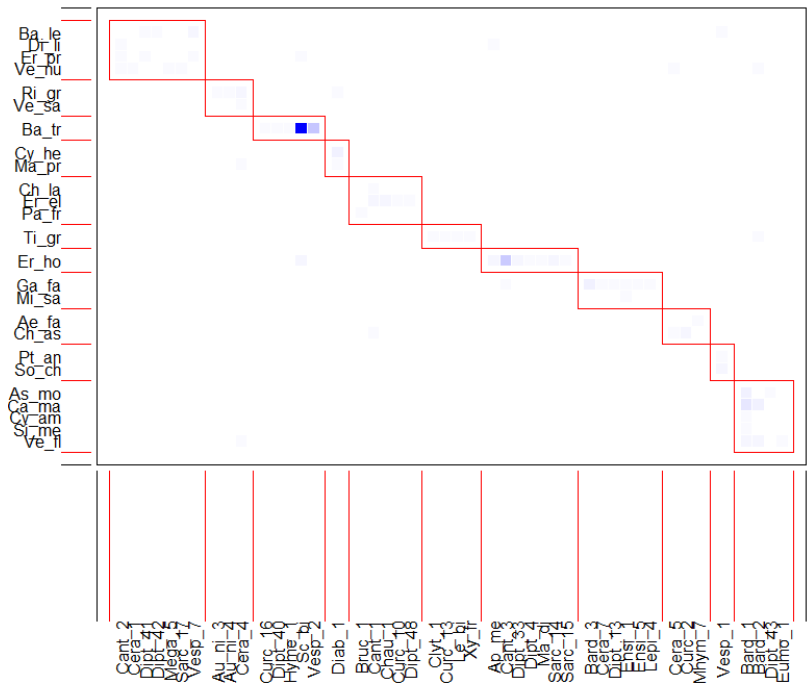
**Figure S3.** Network modules (red polygons) from site MO2



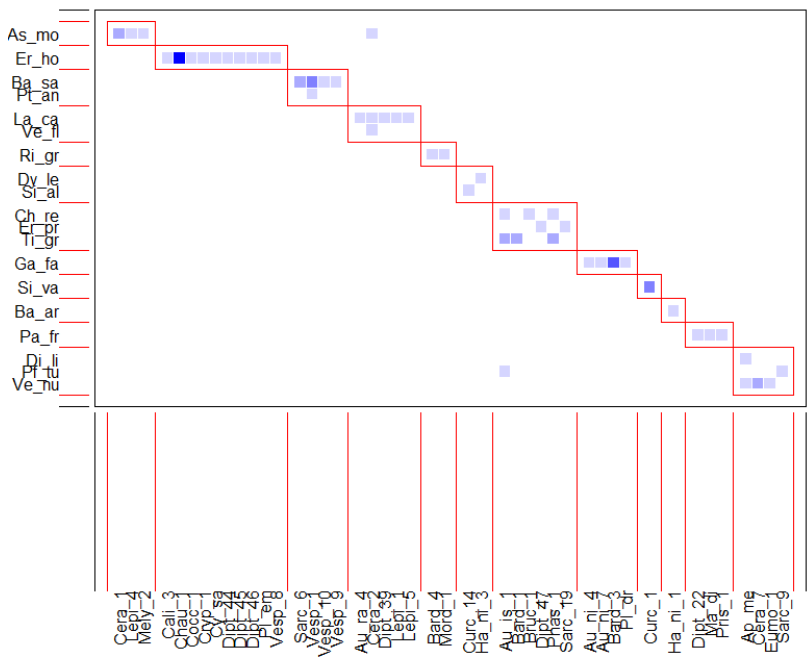
**Figure S4.** Network modules (red polygons) from site MO3



**Figure S5.** Network modules (red polygons) from site SH3

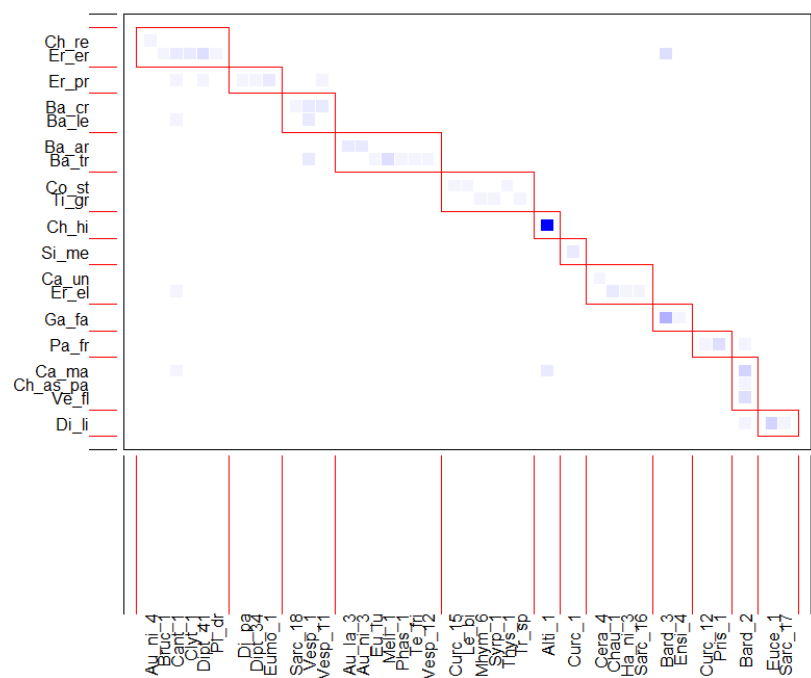


**Figure S6.** Network modules (red polygons) from site SH2





**Figure S7.** Network modules (red polygons) from site SH1



**Figure S8.** Network modules (red polygons) from site SP3

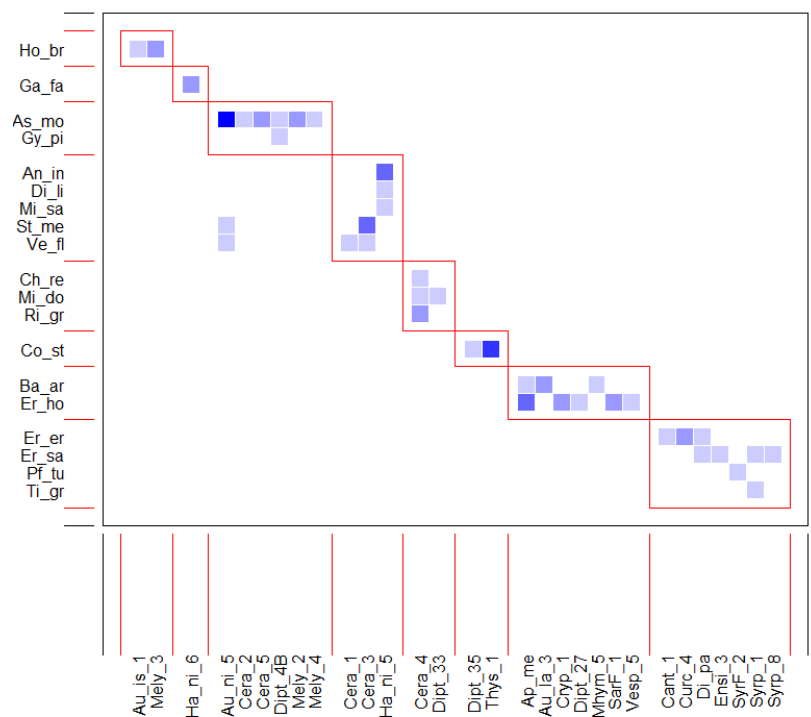


Figure S9. Network modules (red polygons) from site SP1

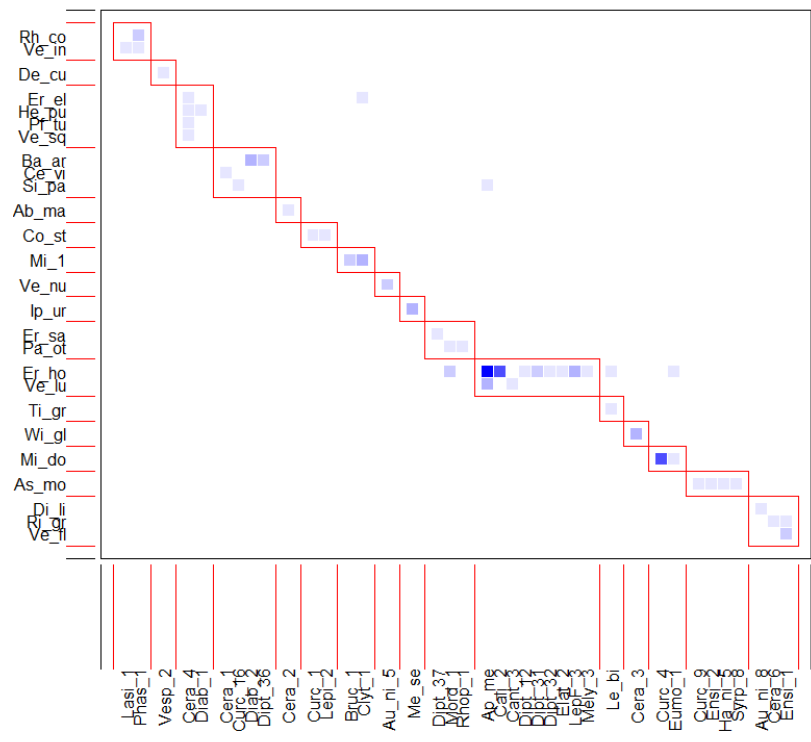
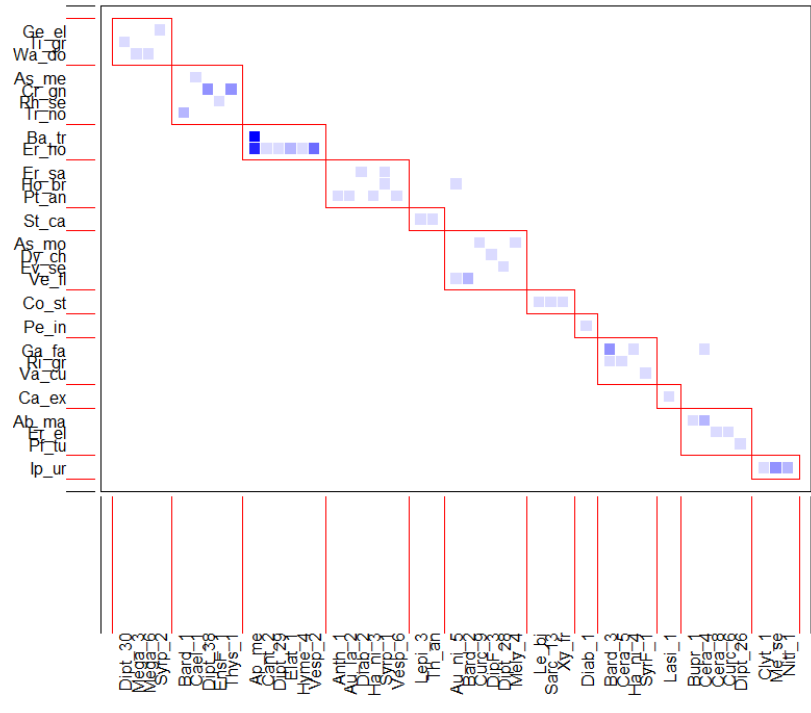
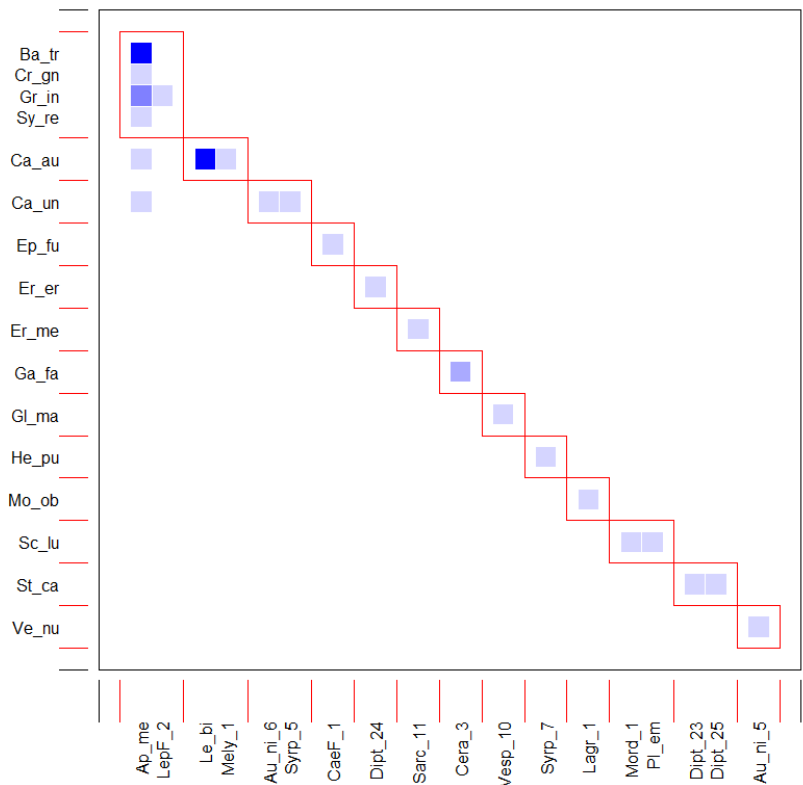


Figure S10. Network modules (red polygons) from site SP2



**Figure S11.** Network modules (red polygons) from site PI2



**Figure S12.** Network modules (red polygons) from site PI3

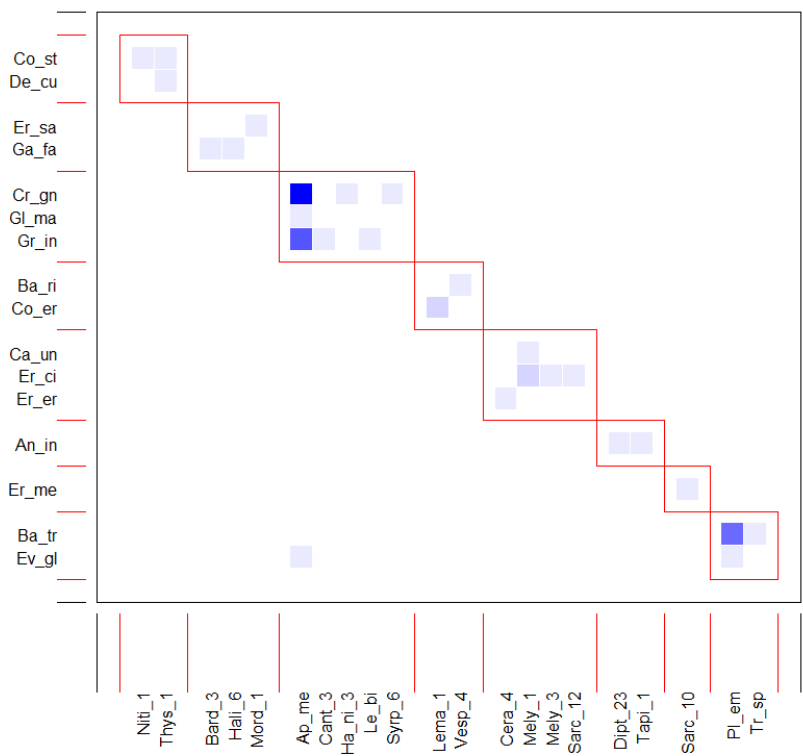
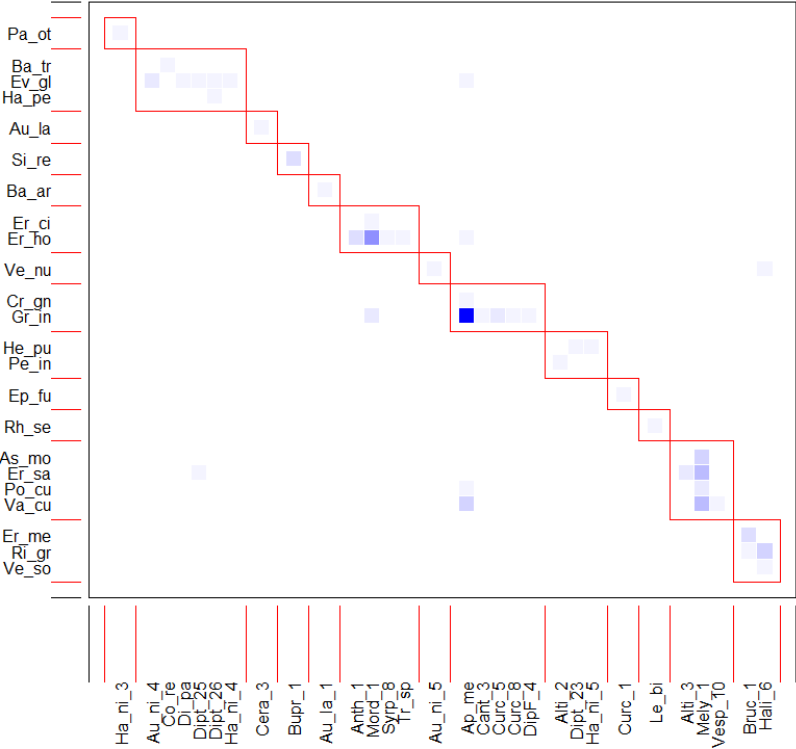


Figure S13. Network modules (red polygons) from site P11



**Figure S14.** Relationship between site urbanization and network asymmetry, number of plant species, and number of flower visitor species in the networks. Equation parameters: number of flowering plants ( $\beta = 0.351$ ,  $t = 0.197$ ,  $p = 0.848$ ,  $R^2 = -0.095$ ); number of flower visitors ( $\beta = 8.363$ ,  $t = 2.264$ ,  $p = 0.047$ ,  $R^2 = 0.272$ ); network asymmetry ( $\beta = 0.116$ ,  $t = 4.041$ ,  $p = 0.002$ ,  $R^2 = 0.582$ ).

